THE EFFECTS OF PSYCHOLOGICAL AGGRESSIVE CHARACTERISTICS AMONG THE PERFORMANCE IN LEARNING DRIVING SKILLS

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Abstract

Young, novice drivers constitute a disproportionate percentage of fatalities and injuries in road traffic accidents around the world. This study, attempts to identify the effects of psychological aggressive characteristics among the performance in learning driving skills. Anger as a general concept can be defined as a multidimensional construct that can be expressed at the cognitive, emotional, psychological and behavioral level (Eckhardt, Norlander & Deffenbacher, 2004). Driving rage is an extrapolation of the general concept of road rage (Deffenbacher et al., 2003). Steering wheel anger, in other words, is conceptualized as a frequent and intense tendency to become angry while driving (Deffenbacher et al., 2003). The results of this study are showing a significant difference between the driving skills acquired by those who have a lower score at the "anger" scale and we also revealed that there is a negative correlation (r= -7.4) between the level of skills and the level of the "anger" parameter.

Keywords: d*riving anger, aggressive driving, anger expression, driver behaviour.*

1. INTRODUCTION

Traffic accidents are still a major cause of injury and death in the world. With the increase of the number of vehicles, the protection of pedestrians and vehicle users is one of the priority topics for vehicle manufacturers (Gatej, Rizeanu,

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Ciolacu, 2016; Rodríguez González et al., 2014).

Major studies in the United States (Toroyan, et al., 2015) and the United Kingdom (Jacobs, Aeron-Thomas, & Astrop, 2000) identified factors associated with large samples of crashes. The research groups, which were unaware of each other's activities, obtained remarkably similar findings. The US study found the road user to be the sole factor in 57% of crashes, the roadway in 3%, and the vehicle in 2%; the corresponding values from the UK study were 65%, 2%, and 2%, respectively. The road user was identified as a sole or contributing factor in 94% of crashes in the US study and in 95% of crashes in the UK study. All the information above supports the core traffic safety research finding that changes in driver behavior offer, by far, the largest opportunities for harm reduction (AAA Foundation for Safety, 2009; Chraif et al, 2015; Rizeanu, Gatej, Ciolacu, 2017; Shinar, 2008).

In the paper "Driver Behavior Questionnaire - A follow-up study", authors Tùrker Òzkan, Timo Lajunen, Heikki Summala (2005) perform a complex analysis, starting from the extended version of the Questionnaire on driver behavior (Lawton et al 2006) to evaluate driver's outrageous behaviors. The respondents, under the protection of anonymity and the confidentiality clause, answered questions regarding the age, sex and frequency of driving a vehicle, the number and type of accidents, the number and type of crime, sanctions received from the authorities responsible for road safety (for irregular parking), overtaking, speed, ordinary violations and traffic aggression, expired validity documents and others) during the last three years, the number of driving years and the annual mileage performed.

In practice, driving style and driving skills can interact to influence the risk of injury, the use of safety margins, the probability of error (Lawton et al, 2006) and error correction (Redshaw, 2004). The errors, argue the authors of the study, are the result of some cognitive processing problems, while the violations include a motivating component and the contextual requirements.

Results of a questionnaire indicated that almost 90% of drivers have experienced at least one situation involving what they described as aggressive driving during the past year (McGarva & Steiner, 2000).

Driving aggression has been defined in many ways in the literature, reaching the conclusion that it can be identified as an intentional act, which can increase the risk of a collision and which is motivated by impatience, ignorance, hostility and time pressure (Gatej, Rizeanu, Ursachi, 2017; Tasca, 2000).

Summarizing factors, which increase probability of aggressive driving, Tasca (2000) identifies the following factors as the most important: driver's young age; gender belonging – men; being in a traffic situation conferring anonymity and/or where escape is very likely; being generally predisposed to seeking emotions or aggressiveness in other social situations; being in an angry mood (likely due to

events that are not related to traffic situation); belief that someone has superior driving skills; traffic jam, but only if drivers do not expect it.

Krahé and Fenske (2002) found out that there were significant relationships between aggressive driving, Macho personality, age, and power of car. Lajunen (2001) studying association between road traffic accidents and personality variables like extroversion, neuroticism and psychoticism, found the following results. Extroversion correlated positively with the number of deaths on the roads, where as neuroticism negatively correlated with the fatal road accidents. It should be noted that the researcher believed that occupational fatalities were very much related to deaths on the roads but not to dimensions of the personality. Many researchers in the field of road traffic safety have explored issues connected with drivers' locus control. For instance, Rudin-Brownand Noy (2002) reported that locus control was one of the most important factors influencing on the drivers' adaptation behavior. The studies conducted by different researchers showed contradictory results, which proved that this aspect could not be considered definitely (Rundmo & Iversen, 2002; Özkan & Lajunen, 2005).

2. OBJECTIVE AND HYPOTHESES

2.1. OBJECTIVE

The objective of this study is to reveal the importance of psychological parameters that are involved in the process of learning driving skills. Many studies are showing a negative effect of the aggressiveness on the quality of the skills acquired in the driving school period (Gatej, Maier, 2016)

2.2. HYPOTHESES

- We presume that there are significant differences between the young drivers that are showing high levels of aggressiveness and those who have a low level of aggressiveness regarding the driving skills acquired until the first evaluation.
- We also presume that there is a negative correlation between the "anger" level and the level of performance in driving.

3. METHOD

For this experiment we have compared the results for a number of 100 young driver students between 2015 -2019, students at a driving school in Bucharest, Romania. From a bigger number of cases we have randomly selected 50 cases with

high scores on the "ANGER" scale from the AVIS instrument and 50 cases with a low level of aggressiveness measured with AVIS. We have investigated the rate of success of these driving students at the first evaluation with the driving school instructor with a 1 to 10 scale for driving performance. The scale that was used by the driving trainer was based on the ability to perform maneuvers. By comparing the two samples we have tried to see if there are any significant differences between the two samples.

4. RESULTS

The Results are showing a significant difference between the driving skills acquired by those who have a lower score at the "anger" scale and those with high values at this parameter by this we can assume that the first hypotheses is confirmed. We have also revealed that there is a negative correlation (r= -7.4) between the level of skills and the level of the "anger" parameter.

Table 1. Descriptive statistics

Group Statistics					
	COD	N	Mean	Std. Deviation	Std. Error Mean
PERFORMANCE	1.00	50	5.54	1.631	.231
	2.00	50	8.88	.746	.106

In the table above we can see a big difference between the mean of aggressive driving students (sample 1) and those who had a low level of "anger" (sample 2).

Table 2. Independendent Samples t Test

Independent Samples Test								
	Levene's Test for Equality of Variances		t-test for Equality of Means					
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference

									Lower	Upper
PERFOR MANCE	Equal variances assumed	30.840	.000	-13.165	98	.000	-3.340	.254	-3.843	-2.837
	Equal variances not assumed			-13.165	68.639	.000	-3.340	.254	-3.846	-2.834

Based on the results shown above, the research hypothesis that assumes significant differences between subjects that have a high score on "anger" parameter (50-100) and those that have a low level (10-40) of for a sample of 100 subjects. Results on learning driving skills regarding an evaluation of the driving instructor were significantly different between the two samples. (M1 = 5.54, M2 = 8.88, t = 13.16, p <0.05). Data revealed by the table above accept the existence of significant differences between the two samples and the confirmation of the statement that anger as an aggressiveness parameter significantly influences driving skills.

Table 3. Correlations

Correlations		ANGER	PERFORMANCE
ANGER	Pearson Correlation	1	-.743[**]
	Sig. (2-tailed)		.000
	N	100	100
PERFORMANCE	Pearson Correlation	-.743[**]	1
	Sig. (2-tailed)	.000	
	N	100	100
**. Correlation is significant at the 0.01 level (2-tailed).			

The hypothesis that presumes a negative correlation between "anger" behavior and driving skills evaluated in driving school was also confirmed. The Pearson Correlation r=-.743 shows a significant negative correlation that can be described from a psychological point of view as following: the more aggressive is the behavior the lowest are the performances in learning driving skills.

5. CONCLUSIONS

Every year, drivers throughout the world are killed or injured in road traffic. Young drivers run a greater risk everywhere, and this problem is still largely unsolved. Better understanding of the underlying processes could, however, be a useful tool. There are, of course, many reasons to speculate why aggressive behaviour might be increasing. More aggression could be seen as resulting from reactions to all sorts of social, cultural, and economic factors; everything from increased traffic congestion to violence in the media. One potential factor worth exploring is changes in traffic enforcement. Strategies to reduce aggressive driving behaviors among the youngest drivers to prevent crashes during their early driving careers can translate into a reduced crash risk over their lifetime. The problem of aggression in traffic can be solved only by analyzing the causes of the aggressive behaviors, in order to reduce their occurrence and to develop efficient programs for informational intervention.

Anger is an emotional attitudinal element with the nature to maintain aggressiveness. Anger in the context of driving, is on one hand, a source of insecurity and of an aggressive traffic, being, on the other hand, a consequence of a society that encourages aggression in all its forms and mirrored perfectly on the traffic (Gatej, Rizeanu, Ursachi, 2017).

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